AMENDMENTS TO THE SPECIFICATION:

Please add the following line at page 1, after line 1 as follows:

Background

Please add the following line at page 1, before line 3 as follows:

Technical Field of Example Embodiments of the Invention

Please add the following line at page 1, after line 9 as follows:

Description of Related Art

Please amend the paragraph beginning on page 2, line 8 as follows:

There is therefore a need for a system that provides scalability in a large scenario such that reliable communications can be provided between a large number of participants. The characteristics and the traffic load of these applications require group communication protocols that allow multipoint communications among the different processes, such as IP Multicast. When applied to pervasive computing scenarios, traditional IP Multicast protocols, or overlay protocols built in a pure peer-to-peer manner, suffer several scaling problems. One of the more complex problems is the management of the network states managed at each participant or at each router. Even if more complex routing protocols are exploited such as content-based routing the management of content-based forwarding rules is still a complex issue that ~~affect~~affects the scalability of the solution.

Please add the following line at page 3, after line 31 as follows:

Brief Summary of Example Embodiments of the Present Invention

Please amend the paragraph beginning on page 4, line 9 as follows:

In use, a network of such devices [[form]]forms a network in which more than one node is used to relay information to its destination. The invention allows the data to be routed between the source and the interested destinations using a diffusion-like protocol. The relay device preparing the data for transmission, and selecting destination devices for that information, has no information about whether the other devices have need of the data to be transmitted to them, so the likelihood of a given item of information received by a given target device being required by that device is essentially random. The targets may be selected using any random, quasi-random, cyclic or other process. In the preferred embodiment an epidemic protocol is used, in which the decision on how to relay a data item is made following the theory of epidemics rather than using a pre-determined routing table or content rules. In particular the tiny parts of data are aggregated as they are relayed among nodes. This provides scalability since the routing decision and the administration cost for each message are reduced to minimum. Furthermore the aggregation aids the scalability of the network, as the rate of the information is reduced from the edge toward the core of the network. Finally the information is relayed by several nodes providing resilience, and can be received seamlessly from more than one source.

Please amend the paragraph beginning on page 5, line 29 as follows:

In the preferred system the messages are aggregated Bloom filter messages. The "Bloom" filter is a method for representing a set of elements such that queries can be made, and was first

described by Burton H. Bloom in an article ***"Space/time trade-offs in hash coding with allowable errors"*** (Communications of the ACM archive Volume 13 , Issue 7 (July 1970) pages 422 – 426. It will be described in more detail later in this specification. Bloom filters have been used for a wide variety of uses from detection of IP address trails to subscription aggregation, but have not previously been used as an aggregation technique for event notification. Bloom filters are very efficient for transmitting notification information, as they do not involve a high computational requirement to append a new message to an existing one.

Please add the following line at page 6, after line 9 as follows:

Brief Description of Drawings

Please add the following line at page 6, after line 21 as follows:

Detailed Description of Example Embodiments

Please amend the paragraph beginning on page 12, line 15 as follows:

The fan-out value F determines how quickly the network becomes "infected" with a given message. Figure 5 illustrates, for a network of 100 nodes and no aggregation, how a single message propagates. The left hand diagram indicates the number of messages propagated in each round [[the]] whilst the right hand one indicates the number of nodes infected after each round, (which is closely related to the cumulative values of the left-hand diagram). It will be seen that a high fan-out value results in very high traffic levels for a brief period, with rapid saturation of the system. A value of F=3 results in almost complete saturation after about eight rounds.

Please amend the paragraph beginning on page 14, line 26 as follows:

In additional to the dissemination of data from a distributed set of sensors, another use of the invention could be in a computational grid. Computational grids are environments in which collection of geographically distributed hardware and software resources are made available to groups of remote users. Resources can be of different types: computers, storage spaces, instruments, and data, and their availability and capacity changes dynamically. Grid environments are very large scale operations, with millions of resources shared by hundreds of thousands of users, but lack any global centralized authority and have highly variable participation patterns. A basic service in large-scale grid environments is resource monitoring. This is required since Grid service brokers have to continuously match users' requests to available resources. The state of these resources (their availability, and the amount of available storage capacity and processing power at any given time) therefore needs to be continuously monitored. The invention could be used as a scalable and distributed event service for passive monitoring of Grid resources. As soon as the attribute of a Grid resource changes (e.g. its available processing power or storage capacity) the resources generate a new event which is distributed to all involved nodes using the epidemic and aggregation techniques of the invention.